

CDA 3201 – Logic Design

Description: (4 credits) Corequisite: L COP2210 or COP 2200 or COP 2212
Fundamentals of logic design. Introduction to Boolean algebra. Simplification of Boolean expressions. Design of combinatorial circuits, design with MSI and LSI logic ICs including PLDs. Analysis and synthesis of sequential circuits. Laboratory experiments including CAD tools for design entry with HDL and schematic capture and simulation.

Textbook: Introduction to Logic Design, Preliminary Edition, by Alan B. Marcovitz

Instructor: Borko Furht, Professor of CSE

Goals: This course is designed to give undergraduates in computer engineering the understanding of the fundamentals of digital logic design and to develop the ability of analyzing and designing combinational and sequential digital circuits.

Topics:

1. Introduction to number systems
2. Switching algebra and logic circuits
3. Simplification of switching functions
4. Modular combinatorial logic and programmable devices
5. Sequential systems
6. Solving large sequential problems
7. Simplification of sequential systems

Lab:

The course includes laboratory experiments, which consist of wiring several logic chips together to implement simple logic circuits. Each student needs to buy his/her own portable breadboard on which the circuits will be assembled. In the lab, the student's circuit will be connected to the trainer for testing and grading. Laboratory manual will be provided in the lab.

Grading Format:	Homeworks	5%
	Tests (2: 20% each)	40%
	Laboratory assignments (5: 5% each)	25%
	Final exam	30%
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	TOTAL	100%